

Owner: Washington Metropolitan Area Transit Authority

**REHABILITATION OF PARKING GARAGES AT WHEATON, HUNTINGTON (EAST/LOWER),
ADDISON ROAD AND NEW CARROLLTON**

CONTRACT FQ19151 - OCTOBER 2020



Main-Contractor: Atlantic Refinishing & Restoration, Inc.



HSE CONTRACTORS INC.

CPM SCHEDULING CONSULTANTS

Narrative Report Baseline Schedule

Notice to Award

September 15th, 2021

Notice to Proceed

October 11th, 2021

Final Completion

December 31th, 2024

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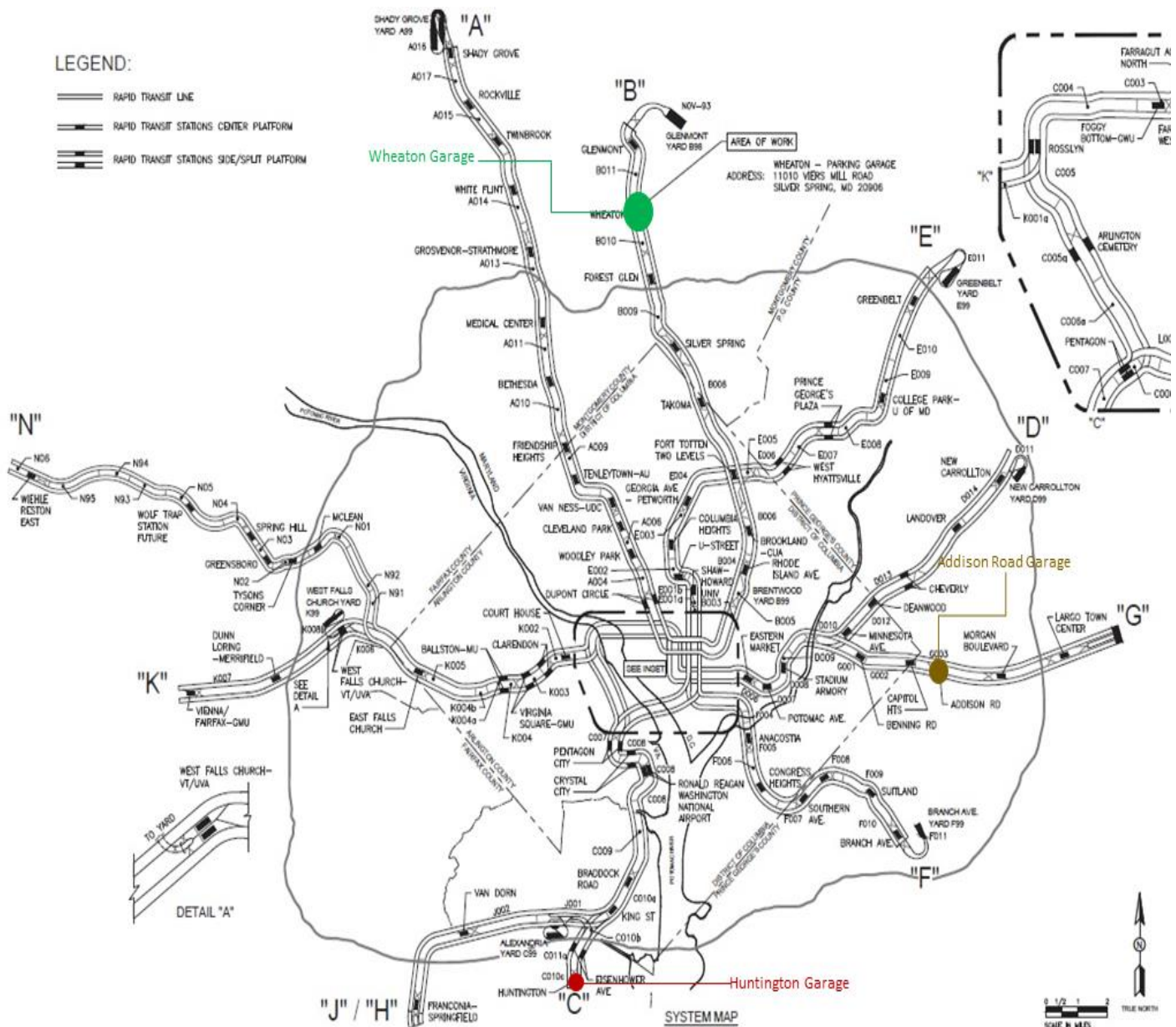
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1- Overview:

- The project is located at Washington D.C. Area Metro, United States.
- The principal components of work to be performed in each project are concrete repairs as the major component followed by electrical, plumbing and architectural modifications and replacements.
- Façade repairs are also represented as a huge part of the rehabilitation process.
- Vehicular and pedestrian bridges have their part of corrective works including:
 - Jacking.
 - Temporary Shoring.
 - Bearing Replacement.
- Atlantic Refinishing & Restoration, Inc. has been awarded the project on Sep 15th, 2021, and the Notice to proceed for Wheaton Garage issued on Dec 28th, 2021, for Addison Road Garage on Oct 24th, 2022, and for Huntington Garage on November 1st, 2023.
- The final completion for Wheaton Garage is planned to be on October 20th, 2022, for Addison Road Garage is planned to be on October 25th, 2023, and for Huntington Garage is planned to be on December 31th, 2024.



2- Construction methodology

- The baseline schedule starts by Contract Award on Sep 15th, 2021. Then Notice to Proceed for Wheaton Garage will start on December 28th, 2021.
- The Preparatory Work “Submittals” will start at the beginning of January 14th, 2022 till the 2nd of March 2022. After that onsite mobilization including temporary barriers, storage areas, field offices will start from December 28th, 2021 till January 4th, 2022.
- The construction process on site will start by phase (1) on December 28th, 2021 and will take place for 91 calendar days, phase (1) is anticipated to be finished on March 28th, 2022. Construction works of phase (1) include the required repairs and modifications for the northern parts of level (1, 2 & 3) and stair tower #3.
- Followed by the southern parts of level (1,2 &3) and stair towers #1, #2 & #4, phase (2) will be started on February 12th, 2022 for 84 calendar days to be finished on the end of May 6th, 2022.
- Phase (3) which include the rehabilitation works needed for the southern parts of level 4 & level 5 will be started on March 1st, 2022 and is anticipated to be finished on May 3rd, 2022.
- Phase (4) including the required repairs and modifications for the northern parts of level 4 & level 5 will be started directly after phase (3) completion on May 7th, 2022 for 64 calendar days to be finished on July 9th, 2022.
- Façade repairs & vehicular and pedestrian bridges repairs representing phase (5) will also take place on the summer of 2022, the exterior works will be performed simultaneously with phase (4) as it will be started on July 11th, 2022 and will be finished on August 26th, 2022.

3- Defined Work Break Down Structure (WBS)

The following diagram reflects the work break down structure used to build the baseline schedule; decomposing the scope of work to manageable sections.

Activity ID	Activity Name	Original Duration	Start	Finish
▢	WMATA Parking Garages Baseline Schedule	834	15-Sep-21	31-Dec-24
	Key Dates & Milestones	1204	15-Sep-21	31-Dec-24
▢	Overall Project Summary	816	11-Oct-21	31-Dec-24
	Wheaton	262	11-Oct-21	20-Oct-22
	Addison Road	255	24-Oct-22	25-Oct-23
	Huntington	294	01-Nov-23	31-Dec-24
▢	Construction	762	28-Dec-21	31-Dec-24
▢	Wheaton	208	28-Dec-21	20-Oct-22
	Phase 1	91	28-Dec-21	28-Mar-22
	Phase 2	84	12-Feb-22	06-May-22
	Phase 3	64	07-May-22	09-Jul-22
	Phase 4	103	10-Jul-22	20-Oct-22
	Phase 5	35	11-Jul-22	26-Aug-22
▢	Addison Road	255	24-Oct-22	25-Oct-23
▢	Phase 1	255	24-Oct-22	25-Oct-23
	Standard Structural repair	255	24-Oct-22	25-Oct-23
	Garage specific structural repair	18	23-Jan-23	15-Feb-23
	Sub-Contractors & Misc.	82	14-Dec-22	11-Apr-23
▢	Huntington	294	01-Nov-23	31-Dec-24
▢	Phase 1	294	01-Nov-23	31-Dec-24
	Standard Structural repair	294	01-Nov-23	31-Dec-24
	Sub-Contractors & Misc.	57	28-Dec-23	19-Mar-24

Figure 1: Work Break down structure (WBS)

4- Contractual Dates

Contract Award Date:	Sep 15 th , 2021
Wheaton Garage Notice to Proceed Date:	Dec 28 th , 2021
Wheaton Garage Final Completion Date:	Oct 20 th , 2022
Addison Road Garage Notice to Proceed Date:	Oct 24 th , 2022
Addison Road Garage Final Completion Date:	Oct 25 th , 2023
Huntington Garage Notice to Proceed Date:	Nov 1 st , 2023
Huntington Garage Final Completion Date:	Dec 31 th , 2024

5- Working hours

The following figure represents the planned hours for the 5 days' work week calendar assigned to the project.



A dialog box titled "Hours per Time Period" with a green header bar. Below the header is a text box containing the instruction "Specify the number of work hours for each time period." To the right of this text box are three buttons: "OK" with a green checkmark icon, "Cancel" with a red prohibition icon, and "Help" with a yellow question mark icon. Below the instruction text box are four input fields arranged horizontally, each with a label above it: "Hours/Day" (containing "8.0"), "Hours/Week" (containing "40.0"), "Hours/Month" (containing "172.0"), and "Hours/Year" (containing "2000.0").

Hours/Day	Hours/Week	Hours/Month	Hours/Year
8.0	40.0	172.0	2000.0

Figure 2: Detailed work hours

6- Project Critical Path

The following figure represents the baseline schedule critical path. The critical path starts by Contract award then preparatory work.

The critical path starting from the NTP date through the shown construction activities and end by the final completion of Huntington on December 31st, 2024.

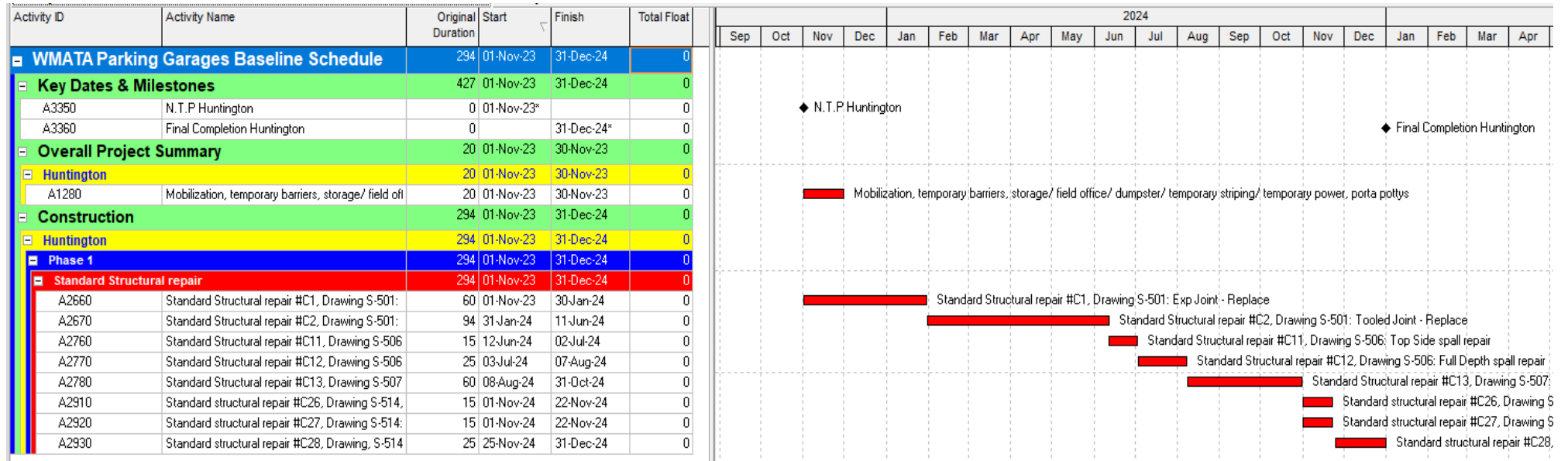


Figure 1: Project Critical Path

7- Calendars

There are two calendars assigned to the project as follows:

1. 7 Days Calendar

This calendar doesn't include any holidays, and it is assigned to all project milestones and Government submittal review activities.

2. 5 Days Calendar "Pueblo Reservoir"

This calendar has 8 working hours/day (from 8:00 to 17:00) including 1-hour break.

The pueblo reservoir calendar takes into consideration the federal holidays, and includes some accommodation for rain delays.

The following Figure represents number of days blocked in the Pueblo Reservoir calendar in each month.

Month	Year	Number of Days in which Precipitation exceeded 0.5 Inch or Snow exceeded 1.0 Inch	average number of days
January	2018	0	1
	2017	1	
	2016	1	
February	2018	4	2
	2017	0	
	2016	3	
March	2018	0	1
	2017	1	
	2016	2	
April	2018	0	2
	2017	4	
	2016	3	
May	2018	0	1
	2017	1	
	2016	1	
June	2018	0	0
	2017	1	
	2016	0	
July	2018	1	1
	2017	1	
	2016	1	
August	2018	1	0
	2017	0	
	2016	0	
September	2018	0	0
	2017	1	
	2016	0	
October	2018	3	1
	2017	0	
	2016	0	
November	2017	1	1
	2016	0	
	2015	1	
December	2017	0	1
	2016	0	
	2015	2	
			total = 11 days

Figure 2: Precipitation exceeded 0.5 inch and snow exceeded 1.0 Inch & Average number of days each month

8- Cost Distribution for the baseline schedule

Cost Usage Profile

The following histogram represents the monthly cash flow and S-Curve for the project.

The peak of the total project cost is at January 2024 as the work in phase one in Huntington.

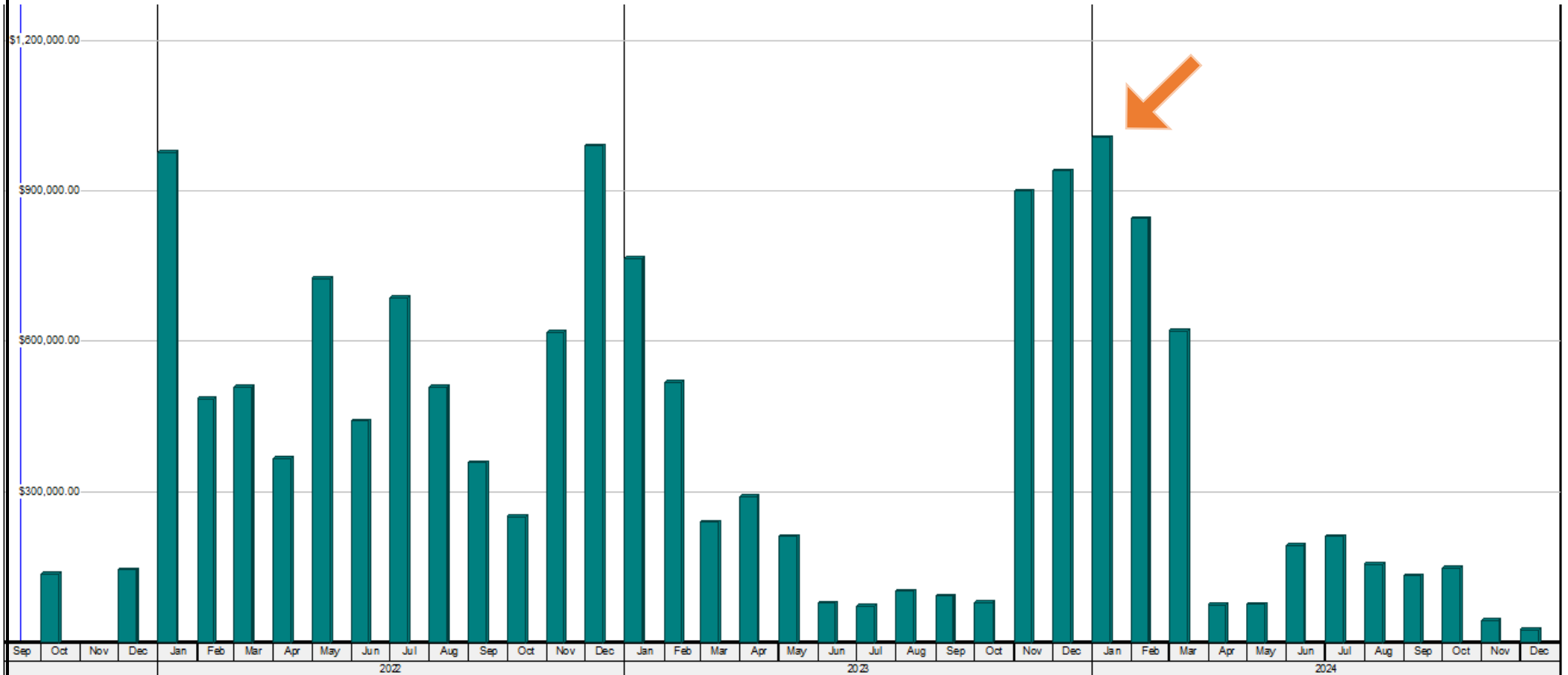


Figure 3: Cost Usage Profile

9- Conclusion

1. The schedule is built using Primavera (P6), with detailed activities down to the specific task to be executed on the job site.
2. The project poses a number of challenges that have been successfully identified by the builder as demonstrated in the detailed sequencing operations of the schedule and this narrative report.
3. The overall strategy of the schedule starts with Key dates and Milestones WBS which contains the most important events of the project then the Overall Project Summary which contains submittals review and approval then Mobilization and Quality Control before construction starts. The next step would be to start construction on Wheaton Garage then Addison Road Garage then Huntington Garage. The sequence of construction is divided into phases.
4. This schedule is a cost loaded schedule with a total budgeted cost of \$15,022,405.55.